

WHAT IS CLAIMED IS:

1. An ink jet recording head maintenance apparatus, comprising:

5 a plurality of wiping members which have a nozzle face formed with nozzles, and wipe the nozzle face of the ink jet recording head for ejecting ink in a form of drops of ink from the nozzles, and at least one of which differs in a wiping force to be applied to the nozzle face;

10 a wiping member selecting means for selecting the optimum wiping member for wiping the nozzle face, from among the plurality of wiping members; and

a wiping mechanism for wiping the nozzle face by the optimum wiping member selected by the wiping member selecting means.

2. An ink jet recording head maintenance apparatus according 15 to claim 1, wherein the wiping mechanism includes:

a wipe support member supporting the plurality of wiping members;

20 a moving mechanism supporting the wipe support member to be movable along the nozzle face, and moving the wipe support member thus supported, along the nozzle face; and

a positioning mechanism for positioning the optimum wiping member selected by the wiping member selecting means, in a contact position in which the optimum wiping member comes into contact with the nozzle face in such a state that the wipe support member 25 is being moved along the nozzle face by the moving mechanism.

3. An ink jet recording head maintenance apparatus according to claim 2, wherein the positioning mechanism includes:

a wiping member moving mechanism for moving the optimum wiping member to a predetermined pressing position; and

5 a pressing mechanism for pressing, toward the contact position, the optimum wiping member moved to a predetermined pressing position by the wiping member moving mechanism.

4. An ink jet recording head maintenance apparatus according to claim 2, wherein the positioning mechanism has a plurality 10 of pressing mechanisms for pressing the plurality of wiping members toward the contact position.

5. An ink jet recording head maintenance apparatus according to claim 2, wherein the plurality of wiping members have, at 15 their tip, an edge portion along a direction intersecting the direction of movement; and

the positioning mechanism positions the optimum wiping member in the contact position so that the edge portion of the optimum wiping member will come into contact with the nozzle face.

20 6. An ink jet recording head maintenance apparatus according to claim 5, wherein the plurality of wiping members are formed of an elastic material; and

the positioning mechanism positions the optimum wiping member in the contact position so that its edge portion may 25 be pressed against the nozzle face by the elastic force of the

optimum wiping member.

7. An ink jet recording head maintenance apparatus according to claim 1, wherein the plurality of wiping members are so formed as to be different in the wiping force against the nozzle face.

5 8. An ink jet recording head maintenance apparatus according to claim 1, wherein the plurality of wiping members are formed of an elastic material.

10 9. An ink jet recording head maintenance apparatus according to claim 1, wherein the plurality of wiping members are formed of a porous material.

10. An ink jet recording head maintenance apparatus according to claim 2, wherein the plurality of wiping members are removably formed in relation to the wipe support member.

15 11. An ink jet recording head maintenance apparatus according to claim 2, wherein the wipe support member are removably formed in relation to the moving mechanism.

20 12. An ink jet recording head maintenance apparatus according to claim 1, wherein the wiping member selecting means selects the optimum wiping member in accordance with an elapsed time after the execution of preceding wiping operation.

13. An ink jet recording head maintenance apparatus according to claim 1, wherein the wiping member selecting means selects the optimum wiping member in accordance with an environmental history after the execution of the preceding wiping operation.

25 14. An ink jet recording head maintenance apparatus according

to claim 1, wherein the wiping member selecting means selects the optimum wiping member in accordance with the number of counts of printed sheets after the execution of the preceding wiping operation.

5 15. An ink jet recording apparatus, comprising:

    a conveying mechanism for conveying a recording medium;  
    an ink jet recording head having a nozzle face formed with nozzles, and ejecting ink from the nozzles to the recording medium being conveyed by the conveying mechanism;

10     a control section for driving to control the conveying mechanism and the ink jet recording head in accordance with a printing data; and

    the ink jet recording head maintenance apparatus according to claim 1.

15 16. An ink jet recording apparatus, comprising:

    a conveying mechanism for conveying a recording medium;  
    an ink jet recording head having a nozzle face formed with nozzles, and ejecting ink from the nozzles to the recording medium being conveyed by the conveying mechanism;

20     a control section for driving to control the conveying mechanism and the ink jet recording head in accordance with a printing data; and

    an ink jet recording head maintenance apparatus according to claim 2.

25 17. An ink jet recording apparatus, comprising:

a conveying mechanism for conveying a recording medium;  
an ink jet recording head having a nozzle face formed with  
nozzles, and ejecting ink from the nozzles to the recording  
medium being conveyed by the conveying mechanism;

5       a control section for driving to control the conveying  
mechanism and the ink jet recording head in accordance with  
a printing data; and

an ink jet recording head maintenance apparatus according  
to claim 3.

10      18. An ink jet recording apparatus, comprising:

a conveying mechanism for conveying a recording medium;  
an ink jet recording head having a nozzle face formed with  
nozzles, and ejecting ink from the nozzles to the recording  
medium being conveyed by the conveying mechanism;

15       a control section for driving to control the conveying  
mechanism and the ink jet recording head in accordance with  
a printing data; and

an ink jet recording head maintenance apparatus according  
to claim 4.

20      19. An ink jet recording apparatus, comprising:

a conveying mechanism for conveying a recording medium;  
an ink jet recording head having a nozzle face formed with  
nozzles, and ejecting ink from the nozzles to the recording  
medium being conveyed by the conveying mechanism;

25       a control section for driving to control the conveying

mechanism and the ink jet recording head in accordance with a printing data; and

an ink jet recording head maintenance apparatus according to claim 5.

5 20. An ink jet recording apparatus, comprising:

a conveying mechanism for conveying a recording medium; an ink jet recording head having a nozzle face formed with nozzles, and ejecting ink from the nozzles to the recording medium being conveyed by the conveying mechanism;

10 a control section for driving to control the conveying mechanism and the ink jet recording head in accordance with a printing data; and

an ink jet recording head maintenance apparatus according to claim 6.